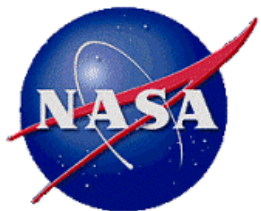


# Leveraging Scheduling Productivity with Practical Scheduling Techniques

Presented By: William G. Paradis

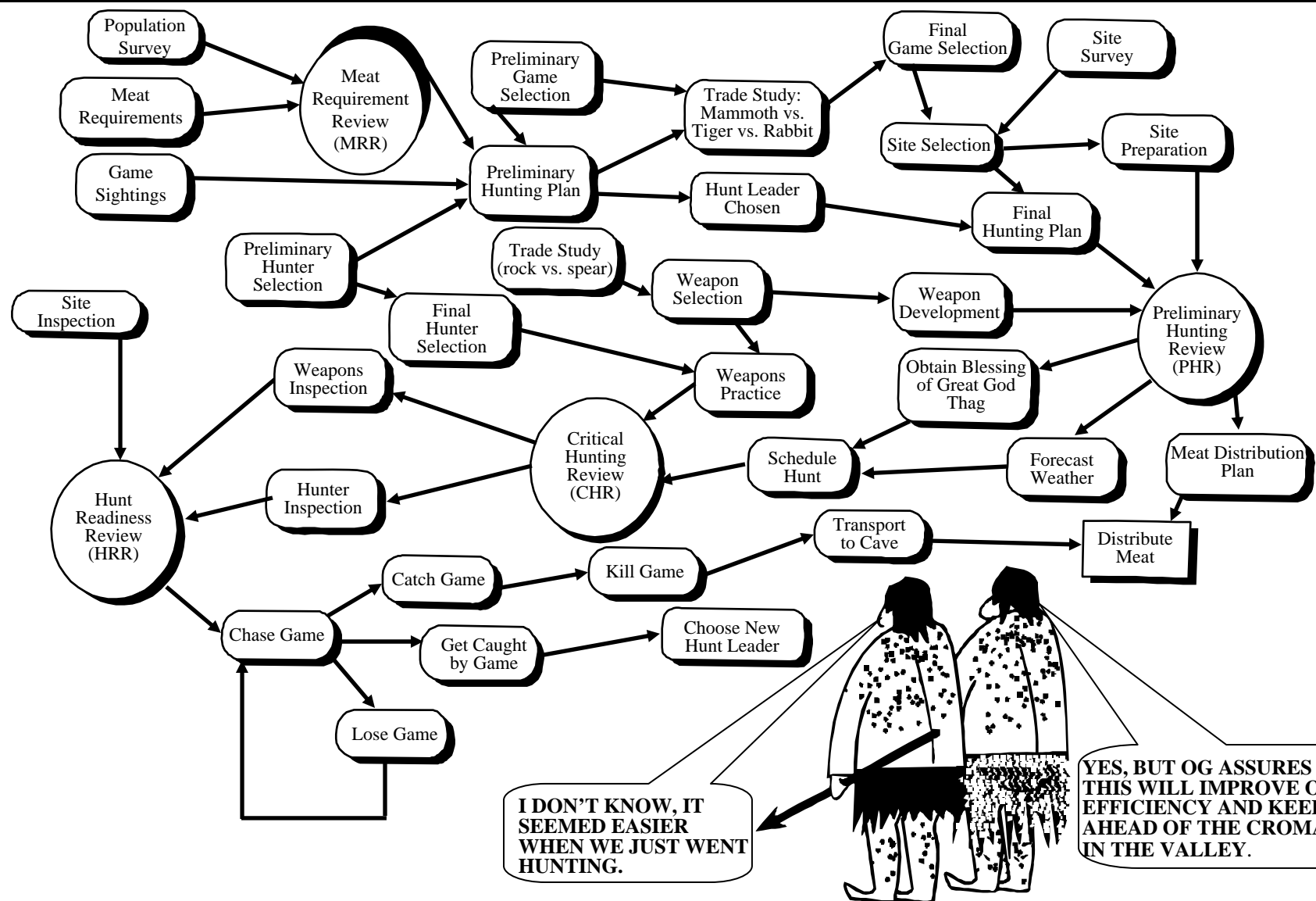
Computer Sciences Corporation

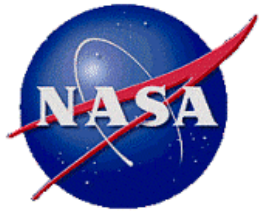
February 26, 2008



# Can You Relate?

## Why Neanderthals Became Extinct

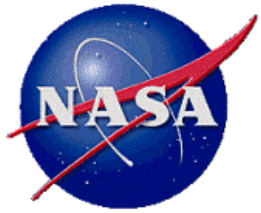




# Agenda

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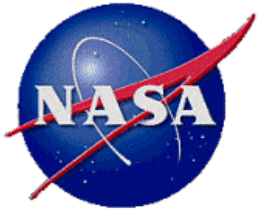
- Scheduling Issues – The Schedule Beast
- Taming the Schedule Beast
- Scheduling with the help of MS Excel & MS Access
- Calculating Earned Value
- 2 New Concepts
- Questions



# Scheduling Issues

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- Unwieldy Schedule Databases
- Faulty Logic or Missing Logic
- Critical Path Can Not be Readily Displayed
- Surprise Constraints
- Multiple Schedule Tools used to present schedule
- Schedule Ownership
- Scheduling Tools More Powerful yet Resources Limited



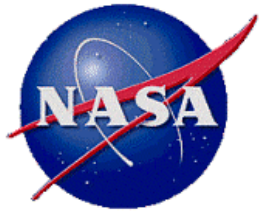
# Agenda

---

- Scheduling Issues – The Schedule Beast



- Taming the Schedule Beast
- Scheduling with the help of MS Excel & MS Access
- Calculating Earned Value
- 2 New Concepts
- Questions

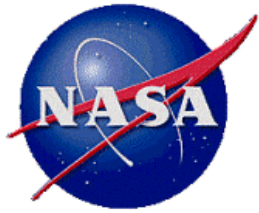


# Taming the Schedule Beast

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- The Scheduler's Tool Kit
- Use of Schedule Templates
- Use of Codes to Manipulate and Display MS Project Data
- Common View, Filter, & Table Names
- Limiting the Use of Constraints in the Database
- Linking only Detail Activities
- Use Common Time Units for Duration (Stick to one; Days, Weeks, or Months)
- Meaningful Activity Descriptions
- Other Items of Interest





# The Scheduler's Tool Kit

## The Scheduling Toolkit

Welcome Jennifer L. Poston

This Site

Site Action

Home

View All Site Content

**Documents**

- Shared Documents
- Schedulers Wiki
- Templates-To-Go
- Knowledge Center
- GSFC Schedule History
- Microsoft Project Tools
- Code 400 News

**Lists**

- Upcoming Events Calendar
- Tasks
- Featured Sites
- GSFC Planning and Scheduling Staff
- Featured Site of the Month

**Discussions**

- Schedule Forum

**Sites**

**People and Groups**

**Pictures**

This website has been created to aid NASA schedulers in their work of providing the best scheduling support possible to the NASA community. This Website houses various scheduling resources such as historical NASA schedules, training materials, points of contacts, and pertinent links to other scheduling websites. Please use this site as a resource as you see fit and feel free to contribute. Contact Jennifer Poston with your contributions, comments, or questions.

## CONNECT AND DISCOVER

### The Scheduling Toolkit

**What's New!**

**Need some training?** 1/4/2008 8:35 PM  
by Walt Majerowicz  
Need some EVM or scheduling training? Check out what we have at: <http://pmknowledge.gsfc.nasa.gov/>

**Welcome to the Scheduling Toolkit !** 1/4/2008 8:23 PM  
by Walt Majerowicz  
The Scheduling Toolkit is a way for planning & scheduling stakeholders to collaborate, share ideas, communicate, and get information about our function. Go ahead and explore it. But this is just a start - we need your help! Start contributing today.

☐ Add new announcement

**Featured Site of the Month**

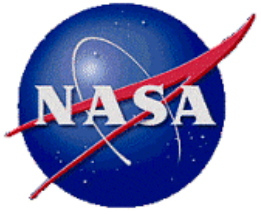
- <http://pmchallenge.gsfc.nasa.gov>
- ☐ Add new link

**GSFC Planning and Scheduling Staff**

**Code 400 News**

Type	Name	Modified By
	Code 400 Weekly Report <b>NEW</b>	Jennifer L. Poston
	Code 400 Top 10 Report <b>NEW</b>	Jennifer L. Poston
	Code 400 Organization Chart	Jennifer L. Poston

☐ Add new document

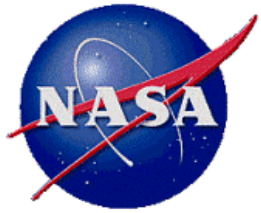


# Taming the Schedule Beast

---

- The Scheduler's Tool Kit
- • Pre-Formatted Schedule Templates
- Use of Codes to Manipulate and Display MS Project Data
- Common View, Filter, & Table Names
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# Schedule Templates

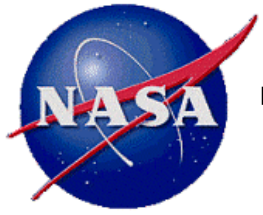
## No Templates

- Set Up Calendars 1-2Hrs
- Set Up Views 1-2 Hrs
- Set Up Filters 1-2 Hrs
- Set Up Tables 1-2 Hrs
- Figure Out How Previous Schedule maintained
- Schedule Database 8-40 Hrs
- Set Project Settings <1Hr
- Load Schedule Activities LOP

## With Templates

- Set Up Calendars ☒
- Set Up Views ☒
- Set Up Filters ☒
- Set Up Tables ☒
- Figure Out How Previous Schedule maintained ☒
- Schedule Database ☒
- Set Project Settings ☒
- Load Schedule Activities

**12.5 Hrs Saved X 1400 Projects = 17,500 Hrs Saved**  
**Times ~\$30 Hr = \$525,000**

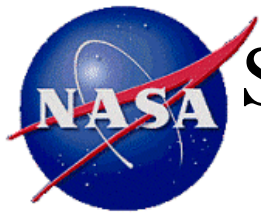


# Schedule Templates – Reserved Fields

## A Few of My Favorites

---

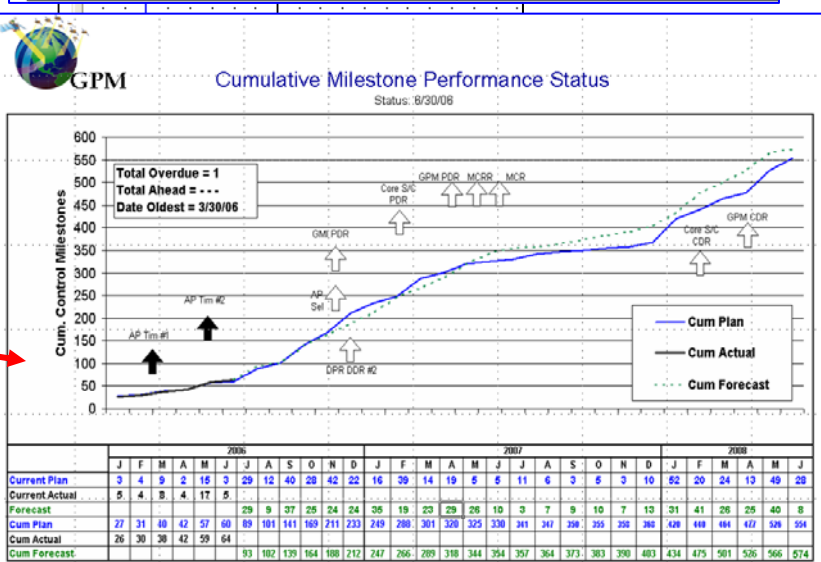
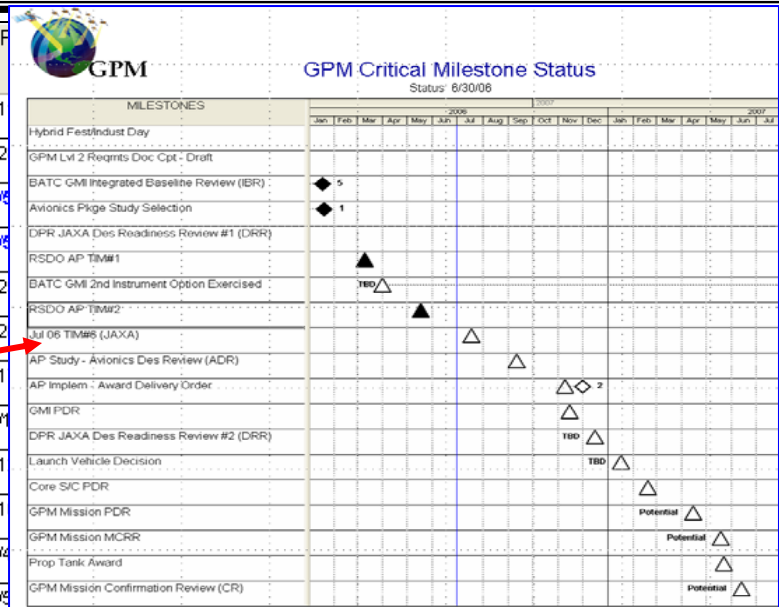
- Text 1 - IMP/IMS Code
- Text 2 - Sort Code
- Text 21 - Program Control Milestones
- Text 22 - Catalog Views Filter
- Text 26/27 - Top & Bottom Text on Bars & M/Ss
- Text 28 - IPT/Sub System Code
- Text 30 - Master/ Intermediate Code
- Finish2 - Summary Progress Lines

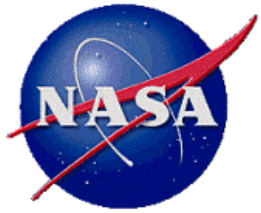


# Schedule Templates – Reserved Fields Con't

## Text 21 – Program Control Milestones

	WBS	MSs	Task	Dur	%	Strt	F
1345	6.1.11		Propulsion - Dev Therm HW Test Plan & Proceeds	40d	0%	6/16/08	8/1
1346	6.1.11		Propulsion - Dev Waterhammer Test Plan & Proceeds	30d	0%	6/16/08	7/2
1347	6.1.11		<b>Prop Procurements</b>	751d	1%	6/15/06	6/5
1348	6.1.11		<b>Demisable Prop Tank</b>	751d	2%	6/15/06	6/5
1349	6.1.11		Demis Prop Tank - Design Study	11d	100%	6/15/06	6/2
1350	6.1.11		Demis Prop Tank - SOW & Spec Dev	20d	0%	6/30/06	7/2
1351	6.1.11		Demis Prop Tank - SOW & Spec Dev Review	14d	0%	7/31/06	8/1
1352	6.1.11	MS	Demis Prop Tank - Release Spec/SOW to Procurement	60d	0%	8/18/06	11/1
1353	6.1.11		Demis Prop Tank - Procurement Activity	81d	0%	11/14/06	3/1
1354	6.1.11	MMS	Demis Prop Tank - Procurement Award	4d	0%	3/13/07	3/1
1355	6.1.11		Demis Prop Tank - Procurement PHS	540d	0%	4/16/07	6/4
1356	6.1.11	MS	Demis Prop Tank - Delivery	1d	0%	6/5/09	6/5
1357	6.1.11		<b>Thrusters</b>	401d	0%	4/5/07	1
1358	6.1.11	MS	Thrusters - Draft SOW/Spec	20d	0%	4/5/07	5
1359	6.1.11		Thrusters - SOW/Spec to Proc'mt	40d	0%	5/3/07	6
1360	6.1.11	MS	Thrusters - Contract Award	1d	0%	6/29/07	6
1361	6.1.11	MS	Thrusters - Fit Unit Del	245d	0%	11/15/07	1
1362	6.1.11		<b>Filters</b>	181d	0%	8/24/07	5
1363	6.1.11	MS	Filters - Draft SOW/Spec	20d	0%	8/24/07	9
1364	6.1.11		Filters - Rel SOW/Spec to Proc'mt	40d	0%	9/24/07	11
1365	6.1.11	MS	Filters - Contract Award	1d	0%	11/21/07	11
1366	6.1.11	MS	Filters - Fit Unit Del	120d	0%	11/23/07	5
1367	6.1.11		<b>Isolation Valves</b>	181d	0%	8/24/07	5

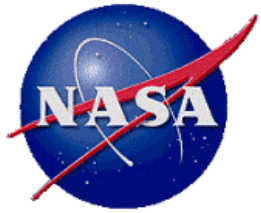




# Schedule Templates – Reserved Fields Con't

Text 26/27 Text Top/Bottom of Bar/Milestone

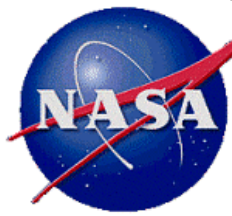
	WBS	MSs	Task	Label T	Dur	%	Strt	Fin	L S	2006												2007												2008																
										2006												2007												2008																
										A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M			
1			<input type="checkbox"/> GPM Milestones						12/1																																									
2	1.X		End of Program Milestone		0d	0%	9/12/13	9/12/13	2/2																																									
3	1.X		GPM System Definition Review (SDR)	SDR	0d	100%	12/8/05	12/8/05	12/8																																									
4	1.X	MMS	GPM Mission PDR	PDR	0d	0%	4/19/07	4/19/07	7/3																																									
5	1.X		GPM PDR Exit Criteria (PDR)		0d	0%	4/20/07	4/20/07	7/20																																									
6	1.X	MMS	GPM Critical Design Review (CDR)	CDR	0d	0%	4/21/08	4/21/08	7/3																																									
7	1.X		GPM Critical Design Review Exit Criteria		0d	0%	6/3/08	6/3/08	7/3																																									
8	5.1		GMI Del to GSFC	GMI Del	0d	0%	2/11/10	2/11/10	2/1																																									
9	1.X		GPM Pre-Environmental Review (PER)	PER	0d	0%	2/15/11	2/15/11	8/4																																									
10	1.X		GPM Pre-Ship Review (PSR)	PSR	0d	0%	12/7/11	12/7/11	5/2																																									
11	1.X		Core S/C Launch	Core LRD	1d	0%	7/10/12	7/10/12	12/2																																									
12	1.X		Constellation S/C Launch	Constell LRD	0d	0%	6/19/13	6/19/13	6/19																																									



# Taming the Schedule Beast

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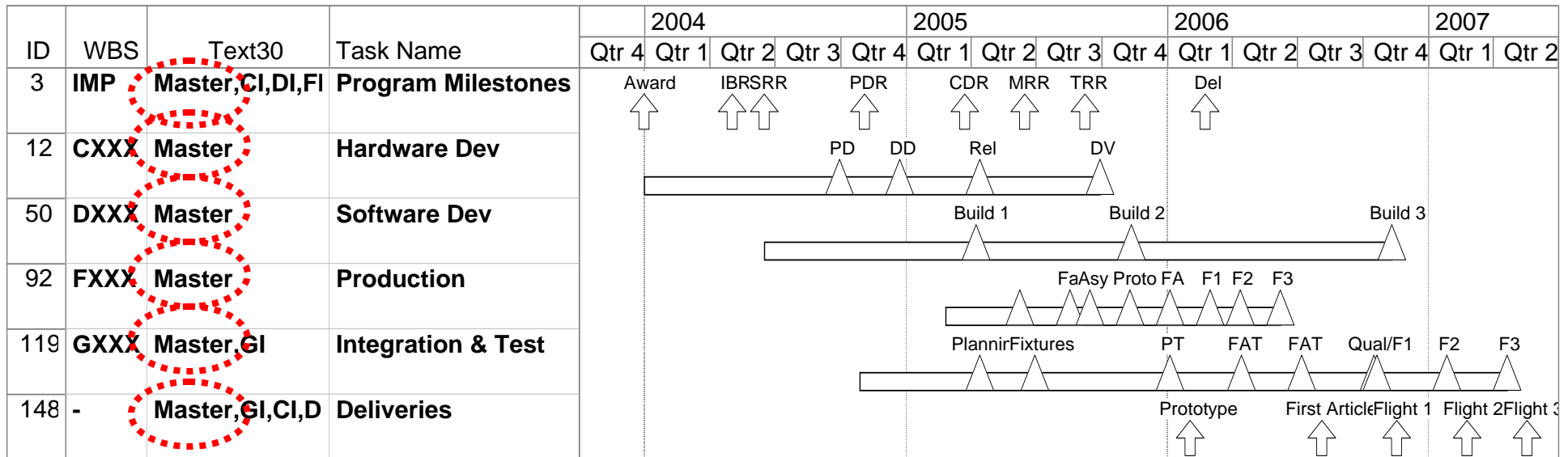
- The Scheduler's Tool Kit
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# Use of Codes to Manipulate and Display MS Project Data

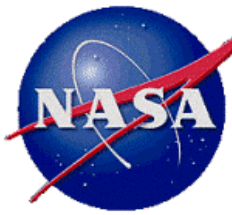
## Top Level Schedules

## Master Schedule View



## Master Schedule Filter

And/Or	Field Name	Test	Value(s)
	Text30	contains	Master

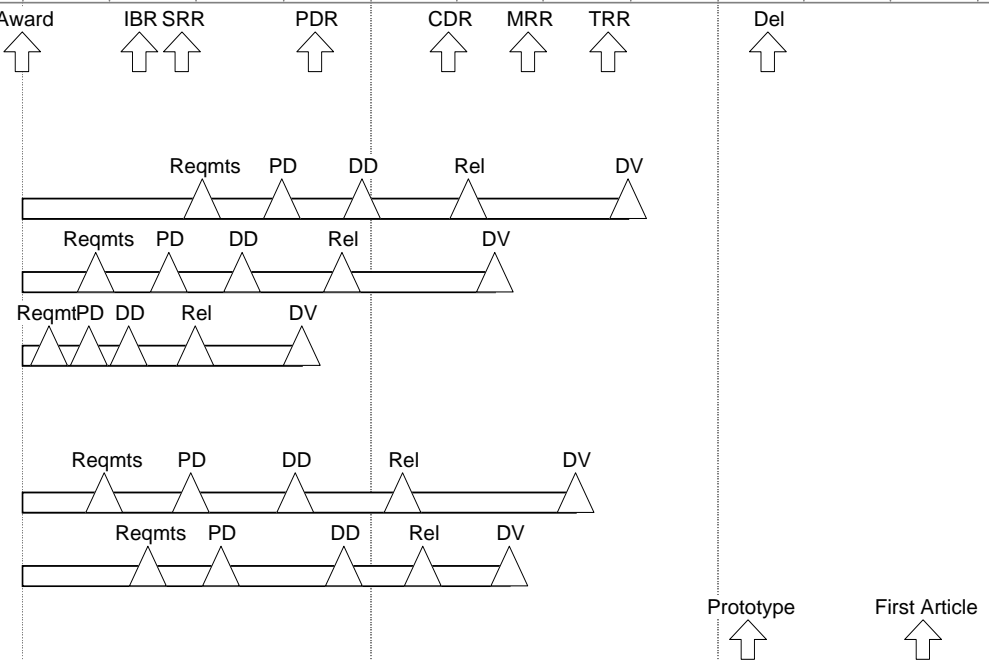


# Use of Codes to Manipulate and Display MS Project Data Con't

## Intermediate Level Schedules

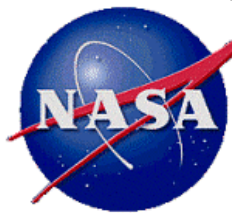
ID	WBS	Text30	Task Name	2004				2005				2006				
				Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
3	IMP	Master, CI, DI, FI	Program Milestones	Award		IBR SRR		PDR		CDR	MRR	TRR		Del		
18	CAXX	CI	Widget Devolpment													
19	CABX	CI	Widget - Module 1													
25	CACX	CI	Widget - Module 2													
31	CADX	CI	Widget - Module 3													
37	CBXX	CI	GizmoFlotchy Development													
38	CBBX	CI	GizmoFlotchy - Module 1													
44	CBCX	CI	GizmoFlotchy - Module 2													
148	-	Master, GI, CI, DI, FI	Deliveries											Prototype		First Article

## Intermediate Schedule View



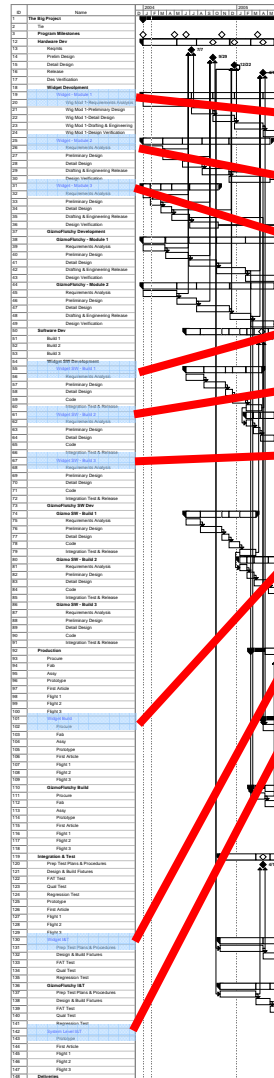
## Intermediate Schedule Filter

And/Or	Field Name	Test	Value(s)
	Text30	contains	CI



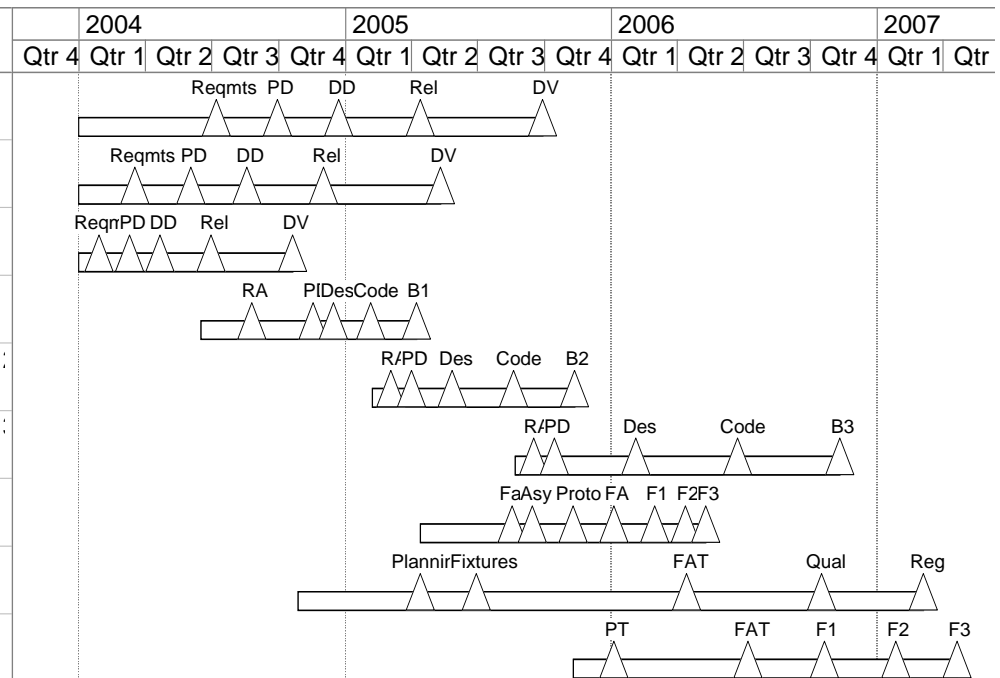
# Use of Codes to Manipulate and Display MS Project Data Con't

## Custom View Filtering



ID	WBS	Text30	Task Name
19	CABX	CL2001	Widget - Module 1
25	CACX	CL2001	Widget - Module 2
31	CADX	CL2001	Widget - Module 3
55	DBAX	DF 2001	Widget SW - Build
61	DBBX	DF 2001	Widget SW - Build
67	DBCX	DF 2001	Widget SW - Build
101	FBXX	FL 2001	Widget Build
130	GBXX	GF 2001	Widget I&T
142	GDXX	GF 2001	System Level I&T

## Custom Schedule View



## Custom Schedule Filter

Filter Definition in 'MS\_Project1'

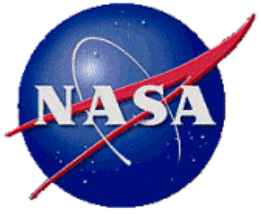
Name: Custom View Filter ☐ Show in menu

Filter:

Cut Row Copy Row Paste Row Insert Row Delete Row

And/Or	Field Name	Test	Value(s)
< Select >	Text30	contains	2001

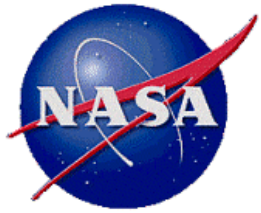




# Taming the Schedule Beast

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- The Scheduler's Tool Kit
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# MS Project Views, Filters, & Tables

**Activity  
Selection  
(Filter)  
&  
Sort**

ID	Task Name	Dur	Start	Finish	2005																			2006			
					J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F		
1	The Big Project	796d	10/29/03	11/15/06																							
2	Program Milestones	660d	1/1/04	7/12/06																							
13	Program Mgmt	660d	1/1/04	7/12/06																							
84	System Engineering	706d	10/29/03	7/12/06																							
102	Hardware Dev	660d	1/1/04	7/12/06																							
103	Widget Dev	660d	1/1/04	7/12/06																							
104	Widget Lead	660d	1/1/04	7/12/06																							
105	Initial Planning for IBF	60d	1/1/04	3/24/04																							
106	SRR P.O.P.	80d	3/25/04	7/14/04																							
107	PDR P.O.P.	80d	7/15/04	11/3/04																							
108	CDR P.O.P.	80d	11/4/04	2/23/05																							
109	MRR P.O.P.	50d	2/24/05	5/4/05																							
110	TRR P.O.P.	50d	5/5/05	7/13/05																							
111	1st Del P.O.P.	60d	7/14/05	10/5/05																							
112	Lot 1 Dels P.O.P.	100d	10/6/05	2/22/06																							
113	Lot 2 Dels P.O.P.	100d	2/23/06	7/12/06																							

**Table**

**View Definition in 'Project1'**

Name: 1- SW Intermediate Schedule

Screen: Gantt Chart

Table: 1- SW Intermediate Schedule

Group: No Group

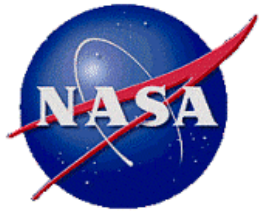
Filter: 1- SW Intermediate Schedule

☐ Highlight filter

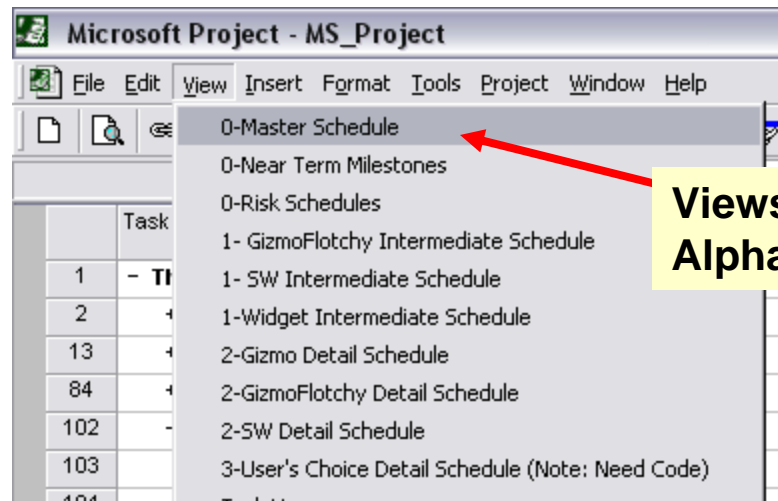
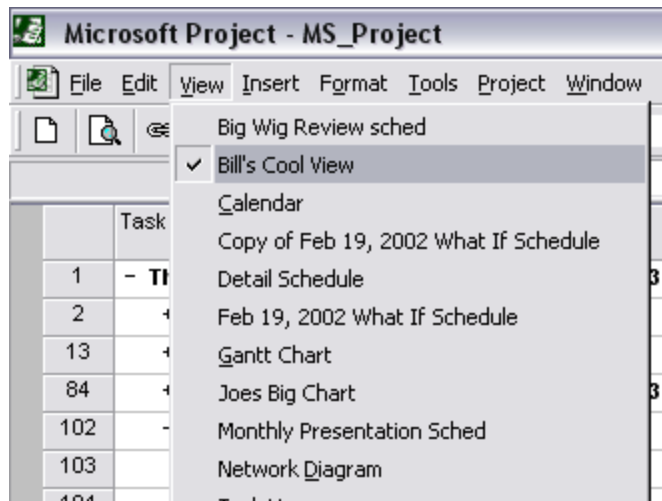
☒ Show in menu

OK Cancel

**View**

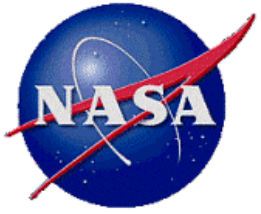


# MS Project Views, Filters, & Tables Con't



- Un-Organized
- Confusing View Names
- Time is wasted looking for or Recreating Views
- Organized
- View Names Easy to Understand
- Standard Set of Views; Saves Time

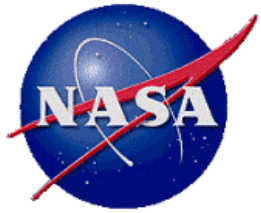
**Work Smarter....Not Harder!!!**



# Taming the Schedule Beast

---

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# Limit the Use of Schedule Constraints

ID	Task Name	Dur	Constraint Type	Constraint	Start	Finish	2004												2005												2006					
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F			
1	Wig Mod 1-Module 1	532d	As Soon As Possible	NA	1/15/04	1/27/06																														
2	Wig Mod 1-Requirements Analysis	152d	Finish No Earlier Than	8/13/04	1/15/04	8/13/04																														
3	Wig Mod 1-Preliminary Design	60d	Finish No Earlier Than	11/5/04	8/16/04	11/5/04																														
4	Wig Mod 1-Detail Design	80d	Finish No Earlier Than	1/28/05	11/8/04	2/25/05																														
5	Wig Mod 1-Drafting & Engineering Release	60d	Finish No Earlier Than	5/20/05	2/28/05	5/2/05																														
6	Wig Mod 1-Design Verification	120d	Finish No Earlier Than	11/4/05	5/23/05	11/4/05																														
7	Wig Mod 1-Design Update & Lot 2 Eng Release	60d	Finish No Earlier Than	1/27/06	11/7/05	1/27/06																														

Set when manually inserting Start & Finish dates, many times **Unintentionally**

Set by the user

**Task Information**

General | Predecessors | Resources | Advanced | Notes

Name: Wig Mod 1-Preliminary Design Duration: 60d ☐ Estimated

Constrain task

Deadline: NA

Constraint type: Finish No Earlier Than

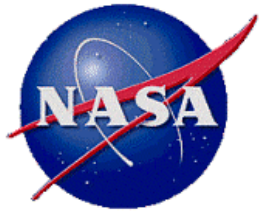
Constraint date: 11/5/04

Task type: ☐ Effort driven ☐ Scheduling ignores resource calendars

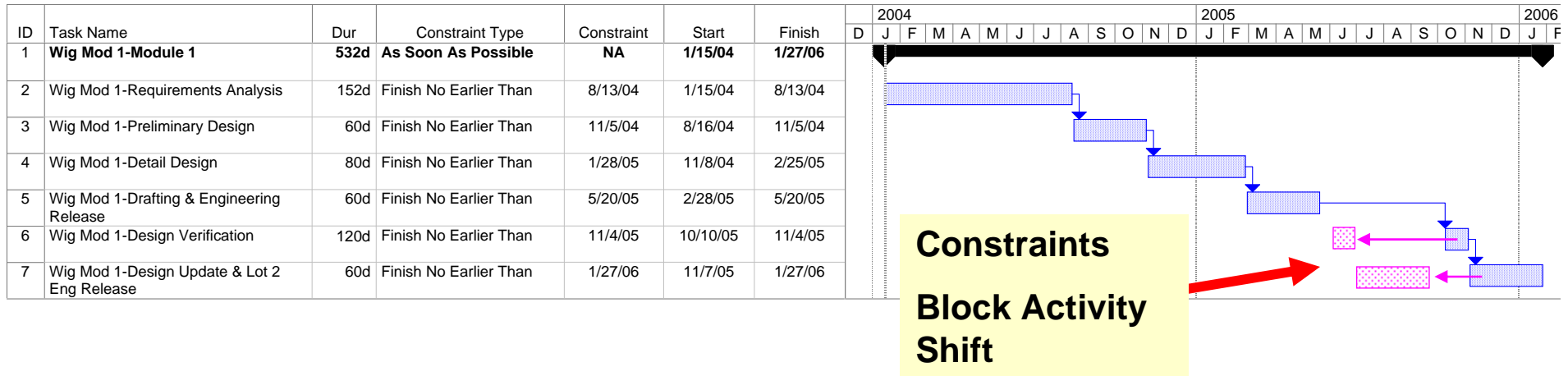
Calendar: ☐ Mark task as milestone

WBS code: ☐ Mark task as milestone



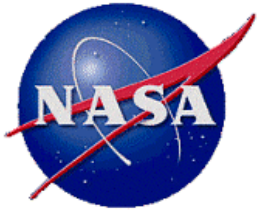


# Limit the Use of Schedule Constraints Con't



- Schedule Tool Can not Calculate Dates
- May Lead to Faulty Critical Path Identification
- Constraints, Sometimes Hard to Spot, Once Set
- Let The Scheduling Tool Work For You !

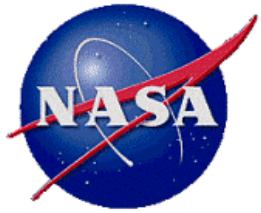
**Work Smarter....Not Harder!!!**



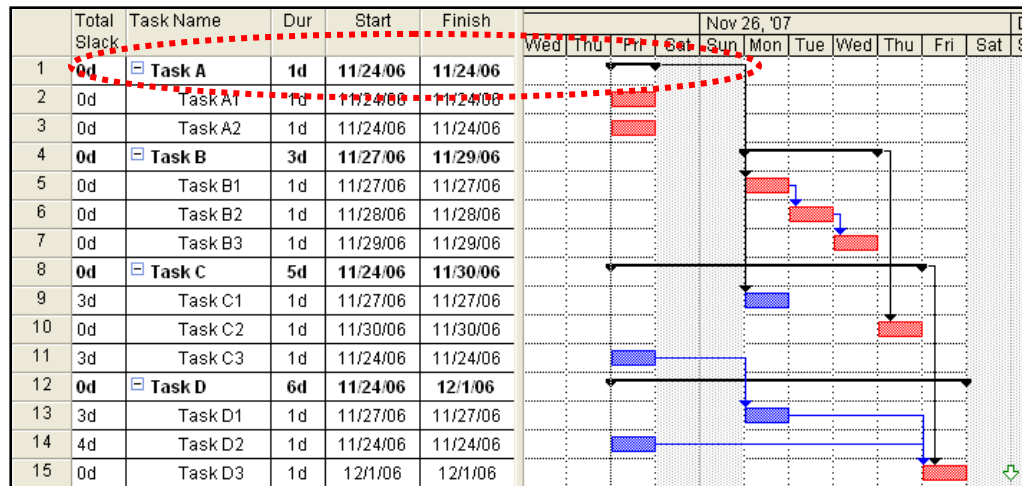
# Taming the Schedule Beast

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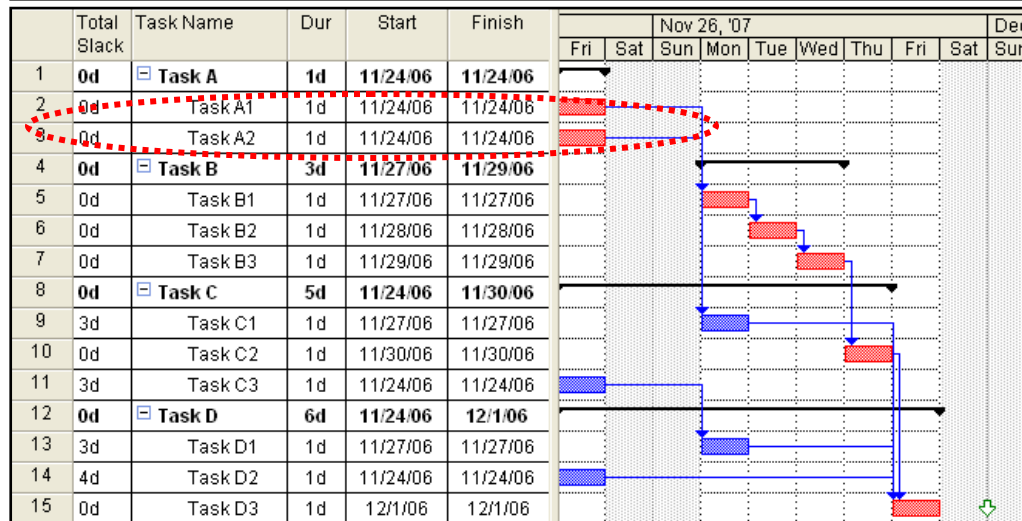
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- Use of Codes to Manipulate and Display MS Project Data
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- Limiting the Use of Constraints in the Database
- ➔ • Linking only Detail Activities
- Use Common Time Units for Duration (Stick to one; Days, Weeks, or Months)
- Meaningful Activity Descriptions
- Other Items of Interest



# Linking only Detail Activities

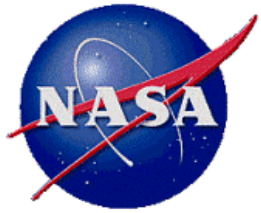


- Linking Summary Activities
  - Only Able to Identify the Critical Area



- Linking Detail Activities
  - Able to Identify the Critical Activities

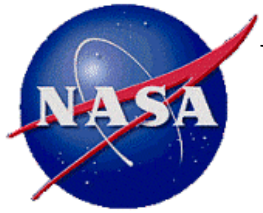




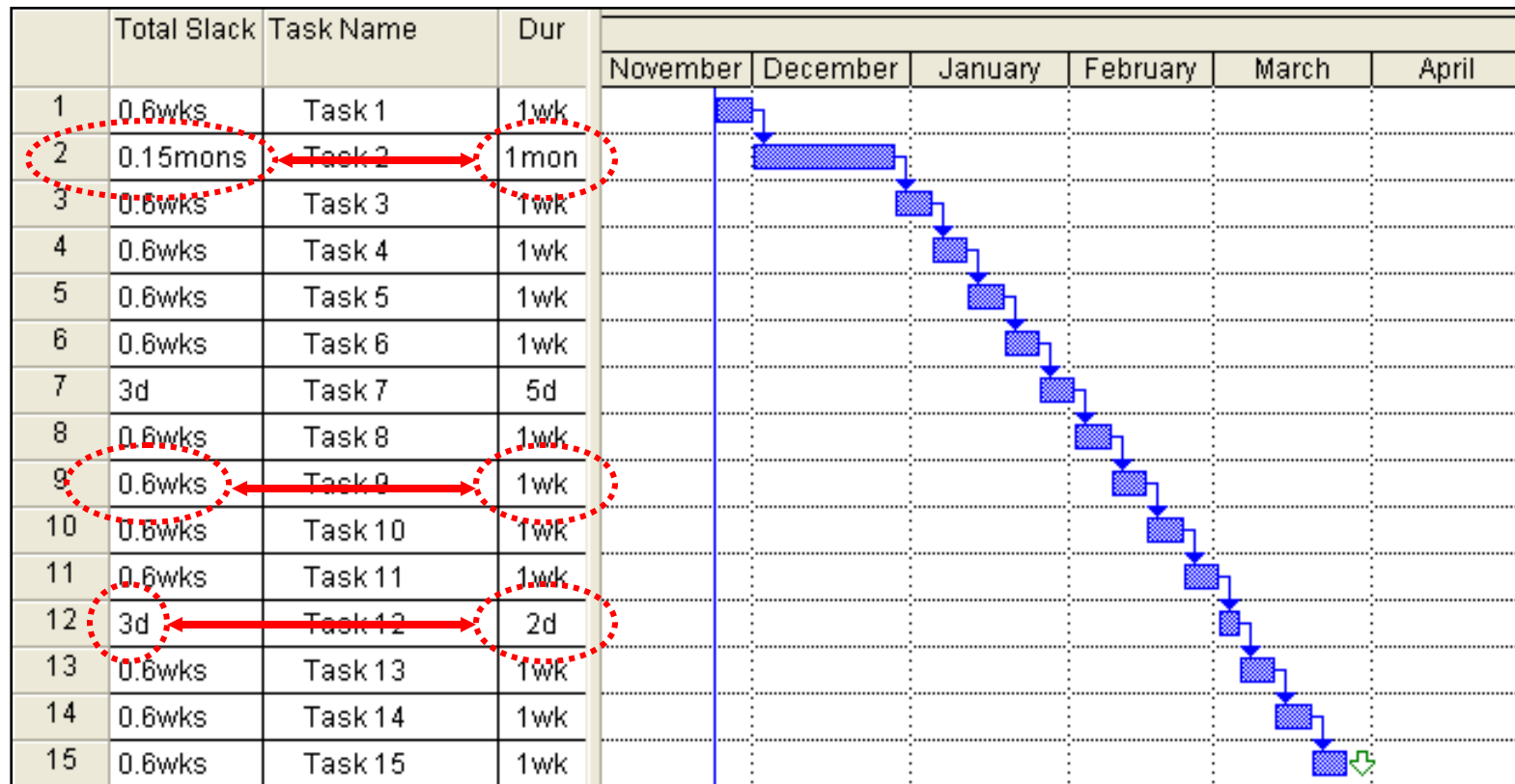
# Taming the Schedule Beast

---

- The Scheduler's Tool Kit
- Use of Schedule Templates
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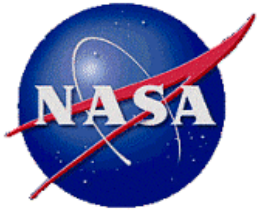


# Use Common Time Units for Duration



Total Slack Becomes Confusing using different time units for the Duration

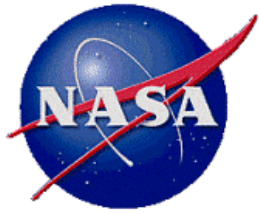
**Work Smarter....Not Harder!!!**



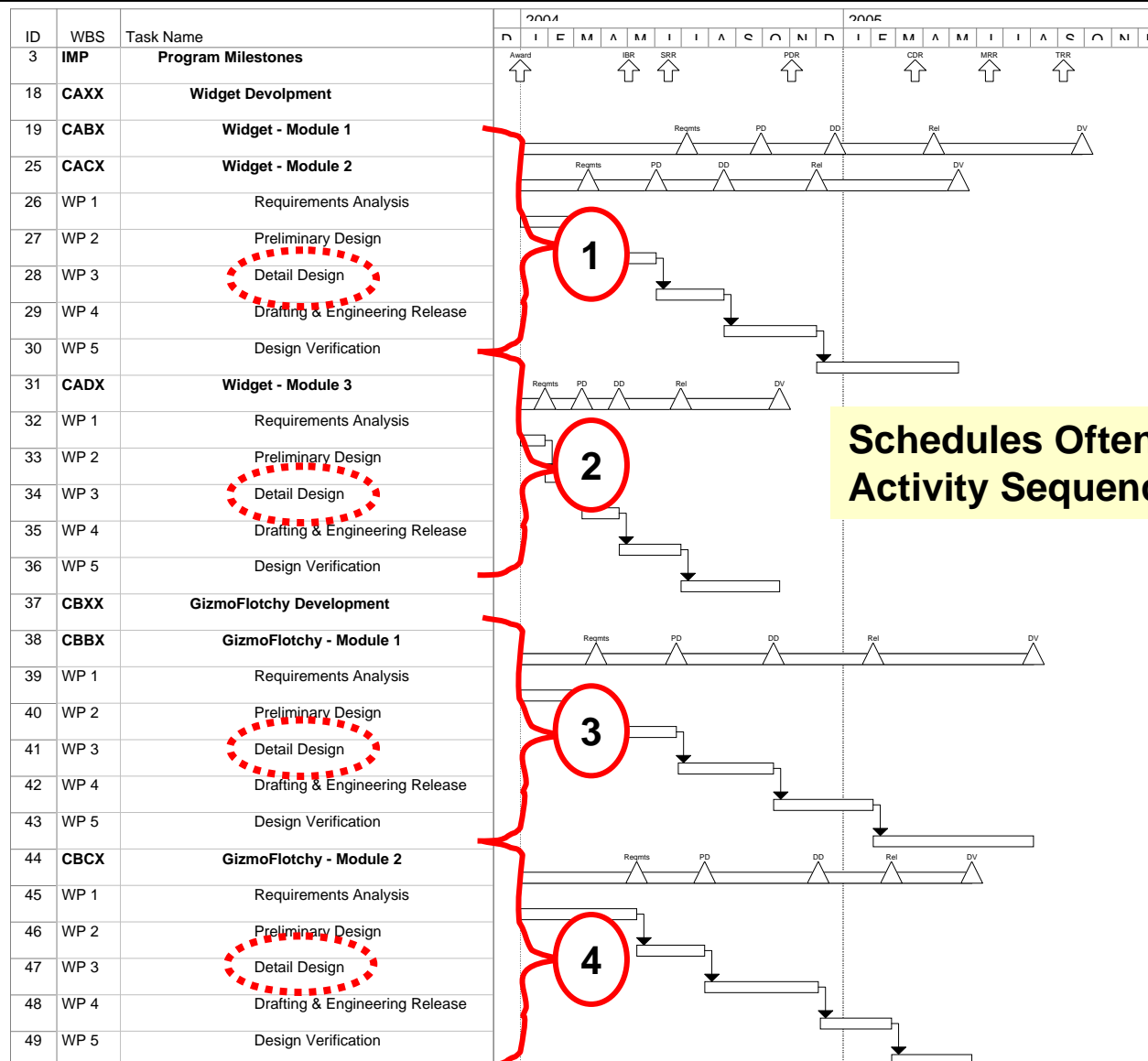
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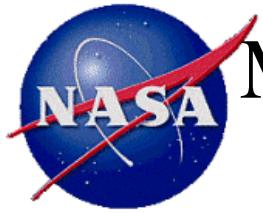


# Meaningful Activity Descriptions





## What Happens When Detail Design Activities are Selected in a Schedule Report?



# Meaningful Activity Descriptions Con't

	WBS	Task Name	Dur	2004												2005												2006		
				D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F
28	WP 3	Wid Mod 2 Det Dsgn	55d																											
34	WP 3	Wid Mod 3 Det Dsgn	30d																											
41	WP 3	Giz Mod 1 Det Dsgn	78d																											
47	WP 3	Giz Mod 2 Det Dsgn	93d																											
58	WP 3	Wid SW B1 Det Dsgn	20d																											
64	WP 3	Wid SW B2 Det Dsgn	40d																											
70	WP 3	Wid SW B3 Det Dsgn	80d																											
77	WP 3	Giz SW B1 Det Dsgn	20d																											
83	WP 3	Giz SW B2 Det Dsgn	40d																											
89	WP 3	Giz SW B3 Det Dsgn	80d																											

**Short Descriptive Labels  
Help to ID Schedule Tasks**

Try to limit length to 25 Characters.

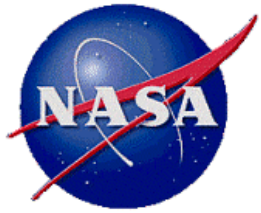
**Short Descriptive Labels  
Help to ID Schedule Tasks**  
Try to limit length to 25 Characters.

Name: FPI CDR Duration: 0d ☒ Effort driven Previous Next

Start: 11/23/09 Finish: 11/23/09 Task type: Fixed Duration % Complete: 0%

ID	Predecessor Name	Type	Lag	ID	Successor Name	Type	Lag
702	IDPU Qual Return to GSFC	FS	0d	463	DES FM1 C&DH PCB Fab	FS	-20d
548	DES Qual Cal Head 2 - Post Qu	FS	0d	438	DES FM1 Anode PCB Fab	FS	-20d
529	DES Qual Radiation Test Repor	FS	0d	245	FPI Instrument Spec/ICD Dev	FF	0d
578	IDPU CDR Peer Review	FS	0d	119	FPI CDR Presentation Pkge	SF	-10d
323	DES CDR Peer Review	FS	0d	120	FPI CDR RFA Close-out	FS	0d
212	DES Science Ops Planning - PDI	FS	0d	266	(CDRL XXX) FPI EEE Parts List	FF	0d
216	DIS Science Ops Planning - PDF	FS	0d	737	(CDRL 33) Environmental Test	SF	-22d

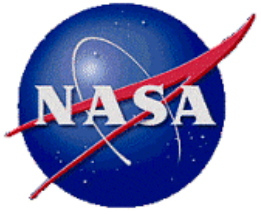
**Work Smarter....Not Harder!!!**



## Other Items of Interest

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- 3<sup>rd</sup> Party Schedule Checking Software
- Use of Schedule Check Lists
- Use of Schedule Frag-net libraries
- Scheduler's Interview Standard Question Lists

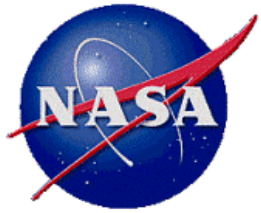


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- Scheduling Issues – The Schedule Beast
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- Calculating Earned Value
- 2 New Concepts
- Questions



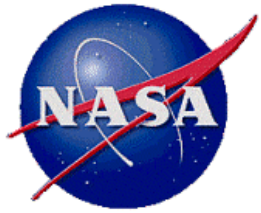


# MS Excel - Concatenation

	A	B	C	D	E	F	G	H	I	J	K	L
1						=concatenate(b3,c3,d3,e3)						
2		Col 1 Data	Col 2 Data	Col 3 Data	Col 4 Data	Formula						
3	Example	Con	cat	en	ate	Concatenate						
4												
5												
6	Real Life Example											
7												
8		Widget -	Award Contract			Widget - Award Contract						
9		Widget -	Prelim Design			Widget - Prelim Design						
10		Widget -	PDR			Widget - PDR						
11		Widget -	Detail Design			Widget - Detail Design						
12		Widget -	Fabrication			Widget - Fabrication						
13		Widget -	Assy			Widget - Assy						
14		Widget -	Test			Widget - Test						
15		Widget -	Deliver			Widget - Deliver						
16		Widget -	Check-out			Widget - Check-out						
17		Widget -	Sign-Off			Widget - Sign-Off						
18												
19												
20												
21												
22												
23												
24												
25												

Then Copy Column F Cells  
Directly into MS Project Cells

**Work Smarter....Not Harder!!!**

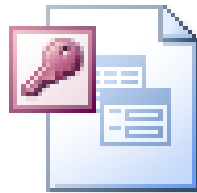


# MS Access – MS Project DB Clean-up



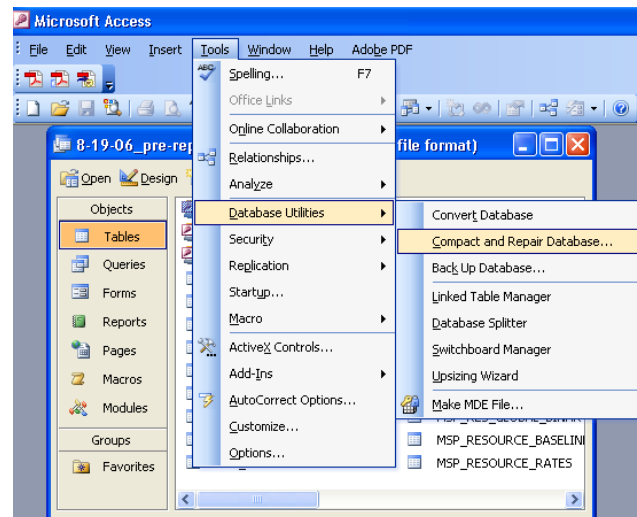
8-19-06\_pre-repair.mpp  
Microsoft Project Document  
5,602 KB

1. **Save Initial MPP file as a MS Access DB File**



8-19-06\_pre-repair.mdb  
Microsoft Office Access Database  
7,836 KB

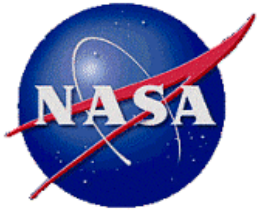
2. **Open File in MS Access & Run the Utility: Compact & Repair**



3. **In MS Project; Open the “Saved MS Access DB File and Re-Save as a MS Project File**



8-19-06\_repair\_ed.mpp  
Microsoft Project Document  
187 KB



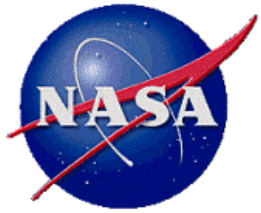
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→ • Calculating Earned Value

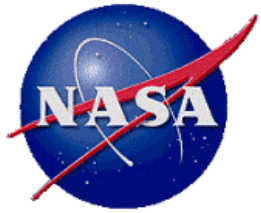
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# Calculating Earned Value Weighted Milestones

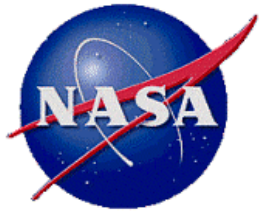
ID	Task Name	Duration	Start	Finish	%															March											
						F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T							
1	Any Ole Task	10 days	2/24/04	3/8/04	10%																										
2	Any Ole Task	10 days	2/24/04	3/8/04	20%																										
3	Any Ole Task	10 days	2/24/04	3/8/04	30%																										
4	Any Ole Task	10 days	2/24/04	3/8/04	40%																										
5	Any Ole Task	10 days	2/24/04	3/8/04	50%																										
6																															
7																															

- MS Project Percent Complete is Based on Duration
- This Works Great if Task is Level Loaded
- What if Activities are Front/Back Loaded?



# Calculating Earned Value Weighted Milestones Con't

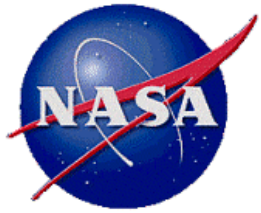
ID	Task Name	Hours	-1	1	2	3	4	5	6	7	8	9	10
1	Widget Detail Design	564											
2	PDR Action Items	24	24Hrs / 564Tot Hrs = .05%Wgt										
3	Design Routings	182	182Hrs / 564Tot Hrs = .32%Wgt										
4	Drafting	70	70Hrs / 564Tot Hrs = .12%Wgt										
5	Thermal Analysis	40	40Hrs / 564Tot Hrs = .07%Wgt										
6	Structrual Analysis	70	70Hrs / 564Tot Hrs = .12%Wgt										
7	Reliability Study	50	50Hrs / 564Tot Hrs = .09%Wgt										
8	Eng Review (CDR)	40	40Hrs / 564Tot Hrs = .07%Wgt										
9	Artwork	60	60Hrs / 564Tot Hrs = .12%Wgt										
10	Final Drafting	8	8Hrs / 564Tot Hrs = .01%Wgt										
11	Assy Drawing	8	8Hrs / 564Tot Hrs = .01%Wgt										
12	Drawing Package Rel	12	12Hrs / 564Tot Hrs = .02%Wgt										



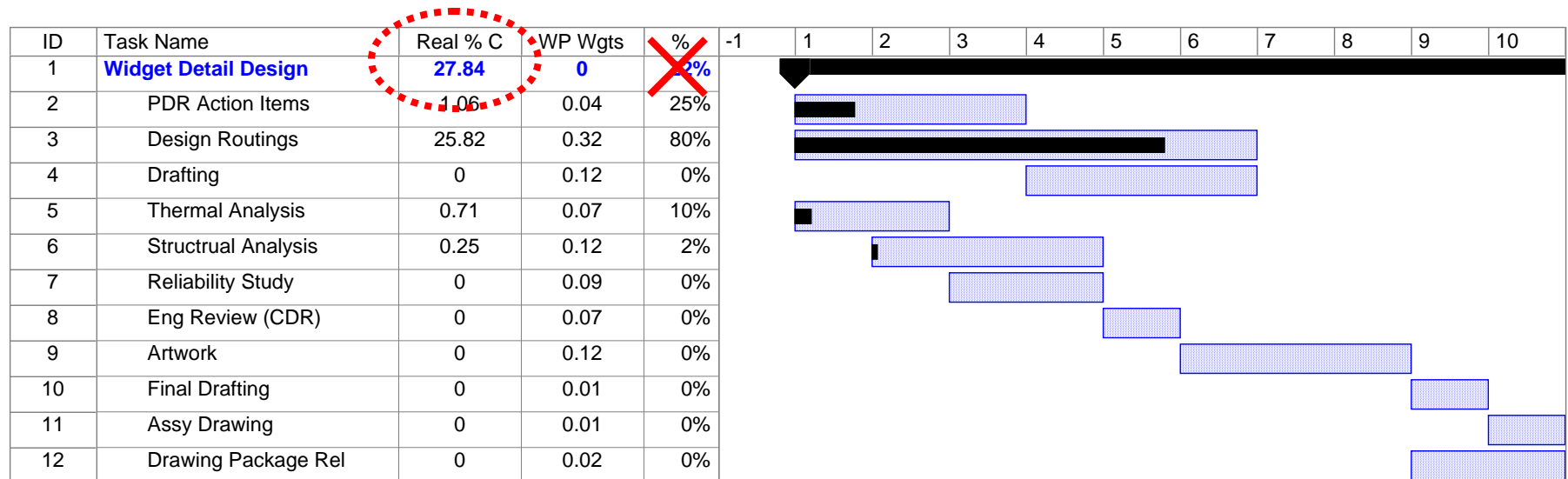
# Calculating Earned Value Weighted Milestones Con't

ID	Task Name	WP Wgts	Hrs	%	-1	1	2	3	4	5	6	7	8	9	10
1	Widget Detail Design	0	564	22%											
2	PDR Action Items	0.04	24	25%											
3	Design Routings	0.32	182	80%											
4	Drafting	0.12	70	0%											
5	Thermal Analysis	0.07	40	10%											
6	Structural Analysis	0.12	70	2%											
7	Reliability Study	0.09	50	0%											
8	Eng Review (CDR)	0.07	40	0%											
9	Artwork	0.12	60	0%											
10	Final Drafting	0.01	8	0%											
11	Assy Drawing	0.01	8	0%											
12	Drawing Package Rel	0.02	12	0%											

**Detail Design 22% Complete**

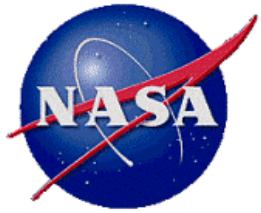


# Calculating Earned Value Weighted Milestones Con't



- MS Project % Complete is Based on Duration Not Weights
- Embedding Equations Directly in MS Project Saves Time and Displays Status More Accurately

**Work Smarter....Not Harder!!!**



# Calculating Earned Value Weighted Milestones Con't

**1 Click**

**2 Click**

**3 Click**

**4 Click**

**5 Click**

**6 Insert Formula**

**7 Click**

**8 Click**

**9 Click**

Task Name	Duration	Weighted Milestones	
1 - Widget Detail Design			
2			
3			
4 Drafting			
5 Thermal Analysis			
6 Structural Analysis			
7 Reliability Study	0	0.09	0%
8 Eng Review (CDR)	0	0.07	0%
9 Artwork	0	0.12	0%
10 Final Drafting	0	0.01	0%
11 Assy Draw			
12 Drawing P			

**Customize Fields**

Field: ☒ Task ☐ Resource Type: Number

Real %C (Number1)

Number2

Number3

Number4

Number5

Number6

Number7

Number8

Number9

Number10

Number11

Rename... Define Outline Code...

Custom attributes

Calculation for task and group summary rows

☐ None ☒ Rollup: Sum ☐ Use formula

Values to display

☒ Data ☐ Graphical Indicators...

OK Cancel

**Formula for 'Real %C'**

Edit formula

Real %C =

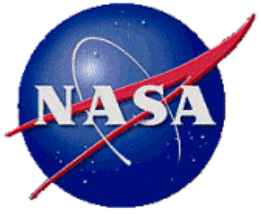
[Number11]\*[% Complete]

+ - \* / & MOD \ ^ ( ) = <> < > AND OR NOT

Insert: Field Function Import Formula...

Help OK Cancel

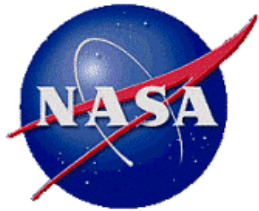




# Agenda

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# Schedule Inchstones/QBDs

	Task	Dur	%	Strt	Fin	2006	2007
872	<input type="checkbox"/> Mech UBS Development	677d	8%	4/11/06	12/12/08	O N D J F M A M J J A S O N D	
873	Mech UBS Prelim Des	149d	15%	4/11/06	11/8/06		
874	Mech GMI Mount Design	82d	5%	7/6/06	10/30/06		

MS Project

Inchstones Calculate Project Activity % Complete

Inchstones Reference Unique Project ID#

Activities are kept at a ~higher level or Critical Path Level in the Project's Schedule Database

Inchstones are planned within the Project's Baseline Start & Finish Dates

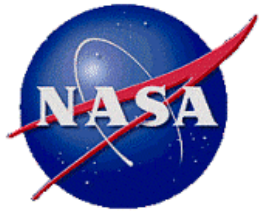
Inchstone #1					
MS Project Task ID: 873				% Comp	15
Prelim Design Activities					
Task	Description	Start	Finish	Wgt	% Comp
Task 1	Analysis 1	4/11/06	8/1/06	5%	100
Task 2	Model 1	8/15/06	6/20/06	10%	100
Task 3	Analysis 2	8/1/06	8/6/06	15%	
Task 4	Model 2	8/22/06	8/27/06	3%	
Task 5	Layout 1	9/2/06	9/7/06	9%	
Task 6	IF Doc - Draft	10/1/06	10/6/06	5%	
Task 7	IF Doc - Final	10/15/06	10/20/06	30%	
Task 8	Peer Review	10/22/06	10/27/06	10%	
Task 9	Clean-up	11/1/06	11/6/06	11%	
Task 10	PDR Spt	11/2/06	11/8/06	2%	

Lower Level Detail Activities are maintained at the Element/Subsystem level in Inchstone Reports that can calculate a Task completion estimates based on assigned weightings

## Benefits:

- Enhances the use of Task Orders or Performance Plans
- Keeps work plans with the people doing the work!
- Reduces Need for a Large Scheduling Staff
- Reduces quantity of Scheduling SW Licenses
- Keeps Project Databases manageable

MS Excel (most people have)



# BPSCI

## Bill Paradis Schedule Completion Index

Project Level	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
- Planned	47	49	56	62	73	74						
- Actual	19	23	32	34	44	45						
- BPSCI	0.40	0.47	0.57	0.55	0.60	0.61						
<b>SubSystem 1</b>												
- Planned	22	23	23	26	29	25						
- Actual	10	11	15	17	22	22						
- BPSCI	0.45	0.48	0.65	0.65	0.76	0.88						
<b>SubSystem 2</b>												
- Planned	15	15	18	19	23	24						
- Actual	1	1	1	1	2	1						
- BPSCI	0.07	0.07	0.06	0.05	0.09	0.04						
<b>SubSystem 3</b>												
- Planned	10	11	15	17	21	25						
- Actual	8	11	16	16	20	22						
- BPSCI	0.80	1.00	1.07	0.94	0.95	0.88						

- The BPSCI Assigns a schedule completion rating to the schedule by period
- This helps to the scheduling team and the project determine the level of schedule commitment to completing activities in the schedule and improves schedule completion estimates

A photograph of the Space Shuttle Columbia during its ascent. The shuttle is white with orange and black external tank and boosters. It is surrounded by a large, billowing white plume of smoke and fire from its engines. The background is a clear blue sky.

The End  
Questions??

**Thank You !!!**

**William Paradis**

**[William.g.paradis@nasa.gov](mailto:William.g.paradis@nasa.gov)**